



**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
FACULTY OF SCIENCE AND TECHNOLOGY EDUCATION  
DEPARTMENT OF SCIENCE, MATHEMATICS AND TECHNOLOGY EDUCATION

**PST1112 ICT APPLICATIONS IN EDUCATION**

**Main Examination**

November, 2024

This examination paper consists of 5 printed pages

Time allowed: 3 hours  
Total marks: 100  
Special requirements: None  
Examiner: Mr. S. Ndlovu  
External Examiner: Dr. L. Hadebe

**INSTRUCTIONS**

1. Answer any four questions
2. Each question carries 25 marks.
3. Sub-division marks are shown in brackets
4. Begin each question on a fresh page and number it.

**MARK ALLOCATION**

QUESTION	MARKS
1	25 marks
2	25 marks
3	25 marks
4	25 marks
5	25 marks
6	25 marks

**Question 1.**

[25 marks]

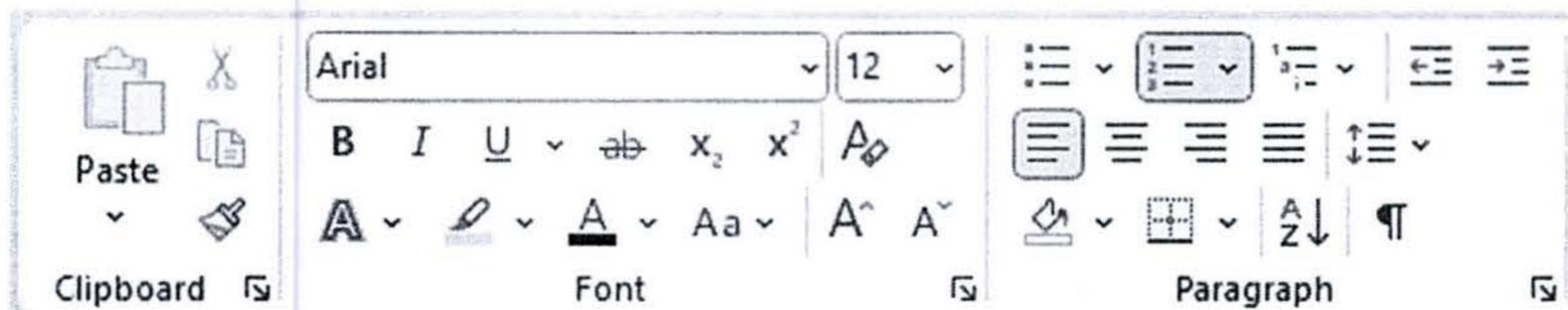
Explain the following terms:

- a) Phishing
- b) Cloud computing
- c) Operating System
- d) Machine learning
- e) Synchronous online learning

**Question 2.**

a) Part of the Microsoft Office ribbon is shown below. Explain the effect that each of the following formatting tools has on text. [5 marks]

- i. Justify text
- ii. Subscript
- iii. Strike through
- iv. Sort
- v. Increase indent



b) Match the operation with the most suitable application in the table below.

[5 marks]

OPERATION	SUITABLE APPLICATION
Explore relationships in multiple datasets	Turnitin
Control another computer from a different location	Mendeley
Check for plagiarism	Publisher
Insert a bibliography	AnyDesk
Design a poster	Ms Access

c) Outline the procedure for doing the following operations.

[15 marks]

- i. Encrypting a Word document
- ii. Inserting a Date Picker on a Word document
- iii. Adding a hyperlink in a document.
- iv. Automatic summation of numbers in a table.
- v. Add a page break

### Question 3.

Study the Employee Management Spreadsheet shown below and answer the following questions.

- a) Identify the cell reference for the following: [1 marks]
  - i. Lisa Taylor
- b) Write down the function used to calculate the following: [4 marks]
  - i. The annual wage bill for the organization
  - ii. The total number of employees
  - iii. Number of employees in the Human Resources department
  - iv. Number of employees who earn a salary that is above \$50,000.
- c) What are named ranges, and how can they be beneficial in managing large datasets? [5 marks]
- d) Describe how to: [15 marks]
  - i. Create a pivot table and its benefits.
  - ii. Clean up a dataset that contains duplicate entries and the steps you would take to identify and remove duplicates using Excel.
  - iii. Protect a worksheet to prevent unauthorised changes.

Employee-Management-Sample-Data - Excel

File Home Insert Draw Page Layout Formulas Data Review View Developer Help

Save Undo Redo

L16

Employee ID	Full Name	Department	Designation	Hire Date	Annual Salary (USD)
S1001	John Smith	Human Resources	HR Manager	15/5/2023	60000
S1002	Jane Doe	Marketing	Marketing Specialist	20/8/2023	50000
S1003	Michael Johnson	Finance	Financial Analyst	10/10/2023	55000
S1004	Emily Brown	Sales	Sales Representative	25/3/2023	48000
S1005	David Wilson	Information Technology	IT Specialist	12/9/2023	60000
S1006	Lisa Taylor	Operations	Operations Manager	30/6/2023	65000
S1007	Daniel Martinez	Customer Service	Customer Service Representative	5/11/2023	45000
S1008	Sarah Anderson	Research and Development	R&D Engineer	18/4/2023	58000
S1009	Christopher Thomas	Production	Production Supervisor	22/7/2023	52000
S1010	Kimberly Garcia	Quality Assurance	QA Analyst	14/2/2023	56000
S1011	William Hernandez	Human Resources	HR Coordinator	1/9/2023	48000
S1012	Melissa Lopez	Marketing	Marketing Manager	10/6/2023	65000
S1013	Richard Perez	Finance	Finance Manager	18/11/2023	70000
S1014	Jessica Gonzalez	Sales	Sales Manager	3/5/2023	72000
S1015	Matthew Wilson	Information Technology	IT Manager	8/8/2023	75000
S1016	Amanda Martinez	Operations	Operations Coordinator	29/10/2023	48000
S1017	James Johnson	Customer Service	Customer Service Manager	12/3/2023	68000
S1018	Laura Brown	Research and Development	R&D Manager	25/6/2023	70000
S1019	Daniel Smith	Production	Production Manager	30/9/2023	72000
S1020	Jennifer Davis	Quality Assurance	QA Manager	17/1/2023	75000
S1021	Michael Garcia	Human Resources	HR Assistant	5/7/2023	42000
S1022	Amy Hernandez	Marketing	Marketing Coordinator	28/4/2023	48000
S1023	Christopher Rodrigue	Finance	Senior Financial Analyst	12/11/2023	60000

**Question 4.**

- a) Explain the difference between a query and a report in Microsoft Access. [5 marks]
- b) You have a database for a library system with tables for Books, Authors, and Borrowers. Describe how you would design a query to find all books borrowed by a specific borrower. [10 marks]
- c) You have been tasked with the responsibility of importing data from an Excel spreadsheet into an Access database. Explain the process and any potential issues you might encounter. [10 marks]

**Question 5.**

[25 marks]

Outline the role of ICT in enhancing educational outcomes in primary and secondary education.

**Question 6**

[25 marks]

Discuss the role of mobile technology in modern education. How can mobile devices and applications enhance learning experiences, and what are the potential challenges and solutions associated with their use in the classroom?